

**Notice of Allowability**

Application No.

10/617,479

Examiner

James L. Habermehl

Applicant(s)

SHIM ET AL.

Art Unit

2651

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 28 Nov 05.
2. ☒ The allowed claim(s) is/are 1, 5-15, 19-32, and 36-109, renumbered 1-100 respectively.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |                                                                                                                     |                                                                                       |
|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)                                                    | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|                                                                                                                     | 9. <input type="checkbox"/> Other _____                                               |

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1. This Office action is in response to amendment filed 28 November 2005, which papers have been placed of record in the file.

2. The drawings and substitute specification were received on 28 November 2005. These drawings are accepted by the examiner, and the drawings and substitute specification have been entered in the file.

3. Claims 1, 5-15, 19-32, and 36-109 are allowed over the prior art of record. The following is an examiner's statement of reasons for allowance:

Claims 1, 15, 32, and 60 are allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose a servo system, a method for operating a servo system, and a disk drive comprising adjusting the disturbance signal as a non-linear function of the ratio of the amplitude of the disturbance signal and threshold value N, as presented in the environment of claims 1, 15, 32, and 60. It is noted that the closest prior art, Ho ('472), shows a method similar to the claimed invention. However, Ho ('472) fails to disclose using a ratio of the disturbance signal and the threshold value as claimed.

Claims 52, 54, 58, and 70 are allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose a servo system, a method for operating a servo system, and a disk drive comprising said function is an odd function, as presented in the environment of claims 52, 54, 58, and 70. It is noted that the closest prior art, Ho ('472), shows a method similar to the claimed invention. However, Ho ('472) fails to disclose using an odd function as claimed.

Claims 53, 55, 59, and 80 are allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose a servo system, a method for operating a servo system, and a disk drive comprising determining the magnitude range of the disturbance signal and filtering the position signal using a peak filter based on the magnitude range of the disturbance signal, as presented in the environment of claims 53, 55, 59, and 80. It is noted that the closest prior art, Ho ('472), shows a method similar to the claimed invention. However, Ho ('472) fails to disclose using a magnitude range of the disturbance signal as claimed.

Claims 56 and 90 are allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose a servo system and disk drive comprising a saturation filter that limits the output of the attenuator to preserve servo-loop stability as the gain controller output increases above a threshold, as presented in the environment of claims 56 and 90. It is noted that the closest prior art, Ho ('472), shows a method similar to the claimed invention. However, Ho ('472) fails to disclose using a saturation filter as claimed.

Claims 57 and 100 are allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose a servo system and disk drive comprising a deadzone controller that filters the output of the attenuator to preserve servo-loop stability as the gain controller output decreases below a threshold, as presented in the environment of claims 57 and 100. It is noted that the closest prior art, Ho ('472), shows a method similar to the claimed invention. However, Ho ('472) fails to disclose using a deadzone controller as claimed.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James L. Habermehl whose telephone number is (571)272-7556. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (571)272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Habermehl/jlh  
9 Dec 05



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